



"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

NAEC 401: FARM MANAGEMENT AND FARM PLANNING

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER 2021

LECTURER: MR LARRY KIES

INSTRUCTIONS

This exam has three questions. Choose ONE of the questions, then answer ALL parts of the question that you choose.

On your answer sheet, write only your answers. Do NOT include the questions.

Do NOT indicate your name anywhere on your answer sheet.

Save your file with the format (Question number) (Student number)
NAEC401 Final Exam.pdf

For example, student number 120120 answering question 1 should have the file name "Q1 120120 NAEC401 Final Exam.pdf"

NAEC 401
Farm Management and
Planning

FINAL EXAM 2021

It is important that you do your own work and use your own words. Copying and pasting from on-line sources or soft-copies of other resources (hand-outs, e-books, etc.), will result in serious loss of marks.

Copying other students' work, or allowing another student to copy your work, can result in Failing the Exam with zero marks for both students.

In all cases, your answers should be based on the information given. For questions involving calculations, **show your work** since marks are allocated for the working.

Question 1.

A farmer named Trymore had a mixed farm. The maize was used mainly for feeding the pigs and chickens on the farm.

At the beginning of the financial year, Nov 2019, Trymore had \$3 000 in liabilities, and \$8 000 in assets. For the financial year Nov 2019 to Oct 2020, the total variable costs and returns for the different enterprises were as follows:

	Total Variable Costs, \$	Returns, \$	Overhead	Total costs, \$	<u>Returns</u> TVC	Profit after overhead, \$
Maize	8,000	21,000	s	t		
pigs	4,000	5,000	u	v		
broilers	7,500	12,300				
layers	6,500	6,950			w.	x.
TOTAL			13,000			

a.

i Give the values of s, t, u, v w, x, in the table above. (12 marks)

ii. Comment on the financial viability of the broiler enterprise, giving reasons for your answers. (4 marks)

iii. Comment on the proportion of overhead costs to variable costs, and strategies to reduce it. (4 marks)

iv. Discuss briefly his profit for the entire farm (after considering overhead costs) as a percentage of beginning-of-year equity. (6 marks)

iv. *Based on the information given*, give an appropriate example of a SMART objective for the next financial year for the *layers*. (2 marks)

b. Trymore's farm is classified as General Agriculture. Discuss strategies for improving the productivity of the workers. (6 marks)

c. Explain the concept of Equamarginal returns using Trymore's four enterprises. (6 marks)

d. Identify the **most** profitable of the enterprises (on a **percent** basis), then suggest appropriate strategies to increase profit even more in that enterprise. (8 marks)

e. Demonstrate your ability to use the Conversion method as discussed in class to answer the question below:

Trymore has a field of 5 Ha. He sowed maize to achieve a population of 48,000 plants per Ha. Each plant produced an average of 0.95 cobs, with grain weighing 260 g. How many empty bags (50 kg) does he need to store the harvest? (4 marks)

f. For the layers enterprise, give 2 **specific** examples **each** of:
non-current assets
variable costs (6 marks)

g. Trymore used a monthly summary for his pigs, which included inventories of the livestock. What are two problems with the records below? (2 marks)

Total animals on last day of previous month	30	Breakdown by class of animals	
piglets born live	0	boars	1
pigs purchased	0	sows, lactating	1
pigs sold live	1	sows, dry	3
pigs slaughtered	1	gilts,bred/earmarked for breeding	5
pigs died	0	piglets, unweaned	23
other		pigs, weaned	15
Total animals on last day of this month	28	Total	48

END OF QUESTION 1

Question 2.

a. After graduation from AU with a BSc in Agribusiness, Myriam started a broiler project. Her record keeping showed the following:

Purchased 500 day-old chicks for \$.90 each.

Feed used: Broiler starter mash- 10 x 50 kg bags @\$31 each

Broiler finisher mash 30 bags x 50 kg bags @\$30 each

Medicines- \$1

Labour- Linos- Two months @\$40 per month

Victor (security) Two months @\$35 per month

Casual employees for slaughtering- \$60 total

Wood shavings- no charge but the transport cost \$20

Water and electricity- \$40

Plastic bags \$10

Sales-

Dining hall- 400 dressed birds, total of 560 kg of meat @\$3.20 per kg

Daily sales- 65 dressed birds, total of 97.5 kg of meat @\$3.50 per kg

Offals and heads- \$35 total

i. Make a table that clearly summarizes the finances of the project, then comment on the profitability of this project. (16 marks)

ii. Calculate the feed conversion of the birds and comment on it. (4 marks)

iii. Calculate the mortality and comment on it. (3 marks)

b. Myriam's project took two months. At the beginning of the project Myriam had total assets of \$1500, and total liabilities of \$300.

Calculate her Return to Equity and discuss briefly whether it was good or not. (6 marks)

c. Discuss different sources of advice that Myriam could use to improve the profitability of her broiler project. Be as specific as possible. (6 marks)

d. Explain the principle of Economies of Scale using Myriam's project. (4 marks)

e. Discuss the principles of Input Procurement, and give *specific* examples of how Myriam could use them to increase her profit margins. (12 marks)

f. A labour-day for workers is considered to be 8 hours.

Linos worked 4 hours per day for 42 days.

Victor worked 4 hours per day for 44 days.

Ten casual workers slaughtered all the birds in one day.

What was the total labour-days for this project? (2 marks)

g. One of the three main financial documents is the Cash flow statement. What are the other two and what do they tell you about net worth? (4 marks)

h. Myriam plans to buy a tractor. Explain how she can use the hour meter of the tractor in her management. (3 marks)

END OF QUESTION 2

Question 3.

- a. Blessing graduated from AU in 2019 with a BSc in Agriculture. He then started a broiler project named Blessing's Birds. He has asked you to help him organize the following data from his farm into meaningful information.

	1/1/2020, values in \$	12/31/2020, values in \$
Total farm liabilities	2,600	800
Total farm assets, market value	8,400	21,500
Accounts payable Balances		
Roger's Rations and Feed	400	600
Naome's Farm Supply	650	340
Accounts receivable balances		
Jack's Jamboree	80	120
Marshall's Meat City	190	160
Inventory of purchased concentrate	250	170
Inventory of live chickens	1,200	600
Inventory of maize grown on the farm	700	960
Cash farm receipts		35,200
Cash farm expenses, including labour and interest on debt		19,550
Building and equipment depreciation		450

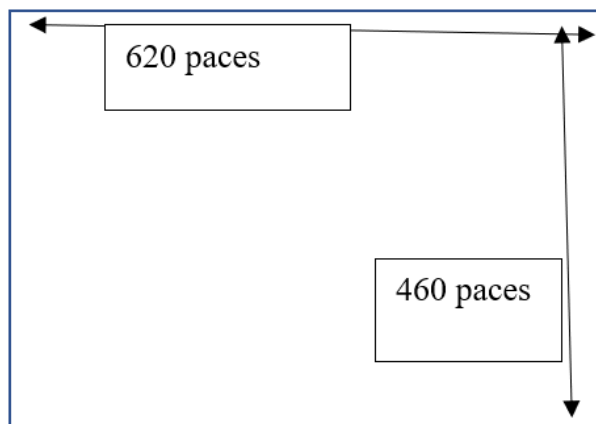
Assume all other values are 0 or irrelevant, and that there is no inflation.

- a. Copy the table below and use it to construct a Profit/Loss Statement of Blessing's farm for 2020. (14 marks)

Cash Receipts		
Change in Inventory (livestock and crops)		
Change in Accounts Receivable		
Total Accrual Receipts (TAR)		
Cash Expenses		
Change in Accounts Payable		
Change in Inventory (cash expense items on hand)		
Depreciation		
Total Accrual Expenses (TAE)		
	TAR- TAE =	
	Net Farm Income =	

- b. Assume 8% return on beginning of year equity. The cash expenses included his workers' salaries, but not his own management.
Discuss his return on his management, considering that he is a university graduate. (10 marks)
- c. For the last batch of broilers, Blessing's broiler mash cost \$32 for 50 kg. His feed conversion ratio ($\text{kg}_{\text{feed}}:\text{kg}_{\text{meat}}$) was 2.7 He sold the broilers to a butcher for \$2.15 per kg of meat.
Discuss the profitability of the batch and how he might improve it. (8 points)

- d. Blessing was offered one tonne of broiler mash on account for \$600/tonne, and he had to pay after three months.
The cash price for the same feed was \$520/tonne, but he would have to borrow money at 3% interest per month. Which is the better option for him- to buy on account, or to borrow money and pay cash? Support your answer. (4 marks)
- e. *Based on the information given*, give an example of a SMART objective Blessing could adopt for the next financial year, then discuss *marketing* strategies that could he use to achieve it. (10 marks)
- f. Blessing found Lasota vaccine for the broilers on special sale and decided to buy two years' supply. Explain the problems with this. (6 marks)
- g. Blessing owns an 82-hp MF440 tractor. Diesel is \$1.25 per litre.
His tractor needs three hours to plough one Ha.
His friend and neighbour, Arthur, has a plough, but no tractor. Arthur asked Blessing to use his tractor to plough Arthur's field. They measured the field by stepping (pacing), and found the following measurements. Both need 65 paces to walk 50 m.
What is a fair price for Blessing to charge Arthur? Support your answer. (8 marks)



END OF QUESTION 3